

Claims

What is claimed is:

1. A non-contact communication medium comprising:
 - a conductive loop antenna formed on one side of a circuit board; and
 - a communication circuit mounted on the one side of the circuit board,wherein one end of the loop antenna is connected to one antenna connection part of the communication circuit, and
 - wherein an arm part provided with a first pad part, a second pad part, and a conducting part for allowing conduction between the first pad part and the second pad part is collapsibly provided such that, when the arm part is collapsed, the other end of the loop antenna contacts the first pad part and the other antenna connection part of the communication circuit contacts the second pad part.
2. A non-contact communication medium according to Claim 1,
 - wherein a portion of the conducting part that contacts the loop antenna when the arm part is collapsed is insulated.
3. A non-contact communication medium according to Claim 1,
 - wherein the other end of the loop antenna comprises a third pad part, and
 - wherein a portion of the other antenna connection part that contacts the second pad part when the arm part is collapsed comprises a fourth pad part.
4. A non-contact communication medium according to Claim 1,
 - wherein the arm part is provided inside of the loop antenna.

5. A non-contact communication medium according to Claim 4,
wherein the arm part is removably formed as part of the circuit board.
6. A non-contact communication medium according to Claim 5,
wherein a magnetic core is installed in a removal hole of the arm part, the removal hole being formed in the circuit board when the arm part is collapsed.
7. A non-contact communication medium according to Claim 6,
wherein the magnetic core comprises a magnetic material having a magnetic permeability higher than atmosphere.
8. A non-contact communication medium according to Claim 1,
wherein the communication circuit is mounted in a position of the one side of the circuit board that overlaps the arm part when the arm part is collapsed, and
wherein at least one of a heat-radiating material and a heat-absorbing material is provided in a position of the arm part that overlaps the communication circuit when the arm part is collapsed.
9. A non-contact communication medium according to claim 1,
wherein the communication circuit comprises an information storage circuit that communicates information in the information storage circuit.
10. A non-contact communication medium comprising:
a circuit board;

an arm part that is removable from the circuit board by a removal hole such that one end of a part of the circuit board is remaining, the arm part being collapsible by the remaining one end functioning as a folding part;

a communication circuit mounted on the arm part; and

a conductive loop antenna formed on the circuit board,

wherein by collapsing the arm part:

one end of the loop antenna is electrically connected to a first antenna connection part provided at the communication circuit, and

the other end of the loop antenna is electrically connected to a second antenna connection part provided at the communication circuit.

11. A non-contact communication medium comprising:

a circuit board;

a conductive loop antenna formed on the circuit board;

an arm part that is removable from the circuit board by a removal hole such that one end of a part of the circuit board is remaining, the arm part being collapsible by the remaining one end functioning as a folding part;

a communication circuit mounted on the arm part;

a first pad part formed on the same side of the circuit board as the side on which the communication circuit of the arm part is mounted;

a second pad part formed on the same side of the circuit board as the side on which the communication circuit of the arm part is mounted, such that the second pad part is connected to a second antenna connection part;

a conducting part for allowing conduction between a first antenna connection part and the first pad part;

a third pad part formed at an end of the circuit board located outside the loop antenna; and

a fourth pad part formed at an end of the circuit board located inside the loop antenna,

wherein the arm part is provided such that, when the arm part is collapsed, the first pad part contacts the third pad part and the second pad part contacts the fourth pad part.

12. A non-contact communication medium according to Claim 11,

wherein when the arm part is collapsed, the arm part and the circuit board are joined together by piercing the arm part with part of the circuit board.

13. A non-contact communication medium according to Claim 11,

wherein, when the arm part is collapsed and is joined to the circuit board, a notch formed at an outer edge of the joined portion of the circuit board is provided.

14. A non-contact communication medium according to Claim 11,

wherein an insulation part is provided at a portion of the conducting part that contacts the loop antenna when the arm part is collapsed.

15. A non-contact communication medium according to Claim 11,

wherein the arm part is provided inside of the loop antenna.

16. A non-contact communication medium according to Claim 15,

wherein the arm part is removably formed as part of the circuit board.

17. A non-contact communication medium according to Claim 16,
wherein, when the arm part is collapsed, a magnetic core is provided in the circuit board along the rim of the removal hole of the arm part.
18. A non-contact communication medium according to Claim 17,
wherein the magnetic core comprises a magnetic material having a magnetic permeability higher than atmosphere.
19. A non-contact communication medium according to Claim 11,
wherein the communication circuit comprises an information storage circuit that communicates information in the information storage circuit.
20. A non-contact communication medium comprising:
a conductive loop antenna formed on one side of a circuit board; and
a communication circuit mounted on the one side of the circuit board,
wherein one end of the loop antenna is connected to one antenna connection part of the communication circuit, and
an arm part provided with a first pad part, a second pad part, and a conducting part allowing conduction between the first pad part and the second pad part is collapsibly provided such that, when the arm part is collapsed, the other end of the loop antenna contacts the first pad part and the other antenna connection part of the communication circuit contacts the second pad part, and
wherein a conductive pattern of traces of a predetermined shape is provided on the arm part, and the conductive pattern is arranged such that, when

the arm part is collapsed, a capacitor for the communication circuit is formed by the conductive pattern and part of the loop antenna formed on the circuit board.

21. A non-contact communication medium according to Claim 20,
wherein the conductive pattern of the predetermined shape is provided such that part of the conductive pattern is removable, and removing part of the conductive pattern allows adjustment of the capacitance of the capacitor.

22. A non-contact communication medium according to Claim 21,
wherein part of the partly removable conductive pattern is arranged to be removable in a predetermined shape.

23. A non-contact communication medium according to Claim 20,
wherein a portion of the conducting part that contacts the loop antenna when the arm part is collapsed is insulated.

24. A non-contact communication medium according to Claim 20,
wherein the other end of the loop antenna comprises a third pad part, and
wherein a portion of the other antenna connection part that contacts the second pad part when the arm part is collapsed comprises a fourth pad part.

25. A non-contact communication medium according to Claim 20,
wherein the communication circuit is mounted on the arm part.

26. A non-contact communication medium according to Claim 20,

wherein the arm part is provided inside of the loop antenna.

27. A non-contact communication medium according to Claim 26,
wherein the arm part is removably formed as part of the circuit board.
28. A non-contact communication medium according to Claim 27,
wherein a magnetic core is installed in a removal hole of the arm part, the removal hole being formed in the circuit board when the arm part is collapsed.
29. A non-contact communication medium according to Claim 28,
wherein the magnetic core comprises a magnetic material having a magnetic permeability higher than atmosphere.
30. A non-contact communication medium according to Claim 20,
wherein when the arm part is collapsed, the arm part and the circuit board are joined together by piercing the arm part with part of the circuit board.
31. A non-contact communication medium according to Claim 20,
wherein the communication circuit comprises an information storage circuit communicating information in the information storage circuit.